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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,003	04/12/2004	Masahiko Sugimoto	F02-167191C/FK	1589

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EXAMINER

MOTSINGER, SEAN T

ART UNIT	PAPER NUMBER
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2624

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08/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/822,003	Applicant(s) SUGIMOTO, MASAHIKO	
	Examiner SEAN MOTSINGER	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-17 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) 4, 5, 12, 13 and 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-3, 6, 9-14, and 23-26 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Applicants Arguments/Amendments

Applicants arguments/amendments filed 5/15/2009 have been entered and made of record.

The arguments with respect to 35 U.S.C. 101 have been fully considered and after further consideration the claims are determined to necessarily require a computer processor.

The arguments with respect to the prior art have been fully considered but are not persuasive. Applicant argues impermissible hindsight in combining the Chetverikov and Matsugu references however the examiner disagrees as the Matsugu reference provides a clear improvement in the number of calculations required. Applicant has canceled all the pervious subject matter of claim 1 and rewrote the claim and argues that none of the references suggest using both a template and a search window. In fact both references disclose this, the "search window" is merely the area covered by the possibly resized template in the original image. Therefore choosing the size of the search window is the same as choosing the desired size of the template after resizing.

Applicants arguments that Chetverkov does not have a date is not persuasive because the website indicates that the page was last modified on November 6 2001.

Furthermore this is a handout for a lecture given in 2001 and therefore has at least a 2001 date.

Applicant is correct in that Chetverkov is merely a method of template matching performed by resizing a template and performing Normalized cross correlation by sequentially extracting portions of the image (search window) and comparing them to a resized template this is done over several template size ranges. Applicants invention is a modification of this method by limiting the size of "a search window" according to distance and focal length then resizing the template accordingly.. Matsugu discloses the improvement of setting size of the object region (search widow/template size) to limit the number of resized templates necessary and therefore speeding up the process(column 6 lines 17-26).

Rejections Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 6, 10, 14 and 22-26 rejected under 35 U.S.C. 103(a) as being rendered obvious by Chetverikov, Dmitry, November 6 2001 <http://www.inf.u-szeged.hu/~ssip/2001/handouts/chetverikov/> in view of Matsugu US 6,636,635.

Re claim 1 Chetverikov discloses A method for detecting whether an image of a characteristic portion exists in an image to be processed, comprising: sequentially cutting images of a required size from the image to be processed (page 1 column 1); and comparing the cut images with verification data corresponding to the image of the characteristic portion (page 1 column 1),

Matsugu discloses using an imaging device to image a subject at a location to form an image to be processed (column 15 lines 37-42) and obtaining information about a distance between said subject and said location (column 47 lines 50-60))

using said information to set upper and lower bounds of a search window for an image of a characteristic portion with reference to a size of the image to be processed (column 47 lines 55-67 note upper and lower limits of a size range are calculated using focal length and distance)

determining a size range of said search window within said size range between said upper and lower limitations (column 48 lines 25-30 for example 3 different sizes are selected).

comparing the cut images with a template of a plurality of templates corresponding to the image of the characteristic portions if any of the templates conforms in size to the determined size of the search window(column 25 -30 note the templates are resized if necessary (obviously if not necessary they will not be reduced or enlarged)).

comparing the cut images with a resized template from a template of a plurality of templates corresponding to the image of the characteristic portions if none the

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templates conforms in size to the determined size of the search window(column 25 -30 note the templates are resized if necessary).

The motivation to combine is to reduce the calculation time (column 6 lines 15-25). Therefore it would have been obvious to one of ordinary skill in the art to combine Mutsugu with Chetverikov to reach the aforementioned advantage

Re claim 2 Matsugu discloses wherein the limitation is effected through use of information about a focal length of a photographing lens in addition to the information about a distance to the subject (column 47 lines 50-67).

Re claim 6 Chetverikov wherein the verification data comprises template image data pertaining to the image of the characteristic portion (page 1 column 1).

Re claim 10, claim 10 claims computer readable medium embodying a program performing the steps of claim 1. Claim 10 is likewise rejected.

Re claim 14 Matsugu discloses determining the distance information used in said limiting size range (distance information column 45 lines 50-67).

Re claim 23 Matsugu discloses wherein said distance between said subject and said location of said image said subject is determined during said image said subject (column 47 lines 50-67).

Re claim 24 Matsugu discloses wherein said imaging said subject is performed by using an imaging device comprising a range sensor (two cameras) and said distance being determined based on a signal from said range sensor (column 47 lines 50-67)

Re claim 25 Chetverikov discloses wherein said comparing the cut images with verification data comprises computing a degree of matching between said image to be processed and said template data by determining a normalizing cross-correlation function between an image cut by said search window and said template data (page 1 column 1).

Re claim 26 Chetverikov discloses shifting said search window in a scanning direction if said degree of matching does not reach a threshold value (page 1 column 1),

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chetverikov and Matsugu in view of Roundhill et US 6447453

Chetverikov and Matsugu discloses the elements of claim 1.

Roundhill discloses the comparison is performed through use of a resized image into which the image to be processed has been resized (column 4 lines 1-20).

It would have been obvious to one of ordinary skill in this art at the time of invention to modify the matching method of Chetverikov and Matsugu to include the step of resizing the image when performing the comparison for increasing speed (Chetverikov and Matsugu column 4 lines 1-20)

Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chetverikov and Matsugu in view of U.S. Patent Number 6,580,810 issued to Yang et al. ("Yang"). figures 7a and 7b

For claim 9, Chetverikov and Matsugu discloses the elements of base claim 1.

Yang discloses limiting a range in which an image of a characteristic portion of a second image to be processed followed by a first image to be processed, is retrieved through use of the information.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the matching method of Chetverikov and Matsugu to limit the size of the search window for the benefit of being more precise in matching as taught by Yang at col. 6 line 66 through col. 7 line 14.

Claim 11, which contains elements similar to claim 9, is rejected for the reasons given in the rejection of claim 9.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN MOTSINGER whose telephone number is (571)270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/

Supervisory Patent Examiner, Art Unit 2624

8/12/2009

Motsinger